

Appl. No. 10/612,649  
Amdt. dated Jun. 21, 2005  
Reply to Office action of Mar. 21, 2005

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listing of claims in the application.

**Listing of Claims:**

1. (Currently Amended) A reflective-transmissive type liquid crystal display device, comprising:

a first substrate, including:

a thin film transistor disposed on a first transparent substrate;

an organic insulation layer disposed on the first transparent substrate to insulate the thin film transistor, the organic insulation layer having a contact hole for exposing an output terminal of the thin film transistor;

a pixel electrode having a transparent electrode connected to the output terminal of the thin film transistor through the contact hole disposed on the organic insulation layer, and a reflective electrode disposed on a first region of the transparent electrode, a second region of the transparent electrode being exposed without being covered by the reflective electrode, edges of the second region including a boundary between the first and second regions and an opening portion where the second region does not contact the first region; and

an orientation film coated on an upper surface of the pixel electrode and having an orientation groove rubbed in a first direction toward the opening portion, the orientation groove preventing impurity from being stacked at a the boundary between the first and second regions of the transparent electrode;

a second substrate, including:

a color filter disposed on a second transparent substrate in opposition to the pixel electrode; and

Appl. No. 10/612,649  
Amtdt. dated Jun. 21, 2005  
Reply to Office action of Mar. 21, 2005

a common electrode disposed on an upper surface of the color filter and facing the pixel electrode; and  
a liquid crystal interposed between the first and second substrates.

2. (Currently Amended) The reflective-transmissive type liquid crystal display device as claimed in claim 1, wherein the boundary of the first and second regions ~~has a linear shape~~ includes at least two straight lines in a layout of the pixel electrode.

3. (Currently Amended) The reflective-transmissive type liquid crystal display device as claimed in claim 2, wherein the first direction is parallel to ~~the boundary one of the at least two~~ straight lines.

4. (Original) The reflective-transmissive type liquid crystal display device as claimed in claim 2, wherein the reflective electrode includes a sidewall making contact with the boundary of the first and second regions, and the sidewall is inclined to prevent the impurity from being stacked at the boundary.

5. (Original) The reflective-transmissive type liquid crystal display device as claimed in claim 1, wherein the second region exposes two edges of the first region of the transparent electrode, and the two edges are connected to each other.

6. (Original) The reflective-transmissive type liquid crystal display device as claimed in claim 5, wherein the reflective electrode includes a sidewall making contact with the boundary of the first and second regions, and the sidewall is inclined to prevent the impurity from being stacked at the boundary.

Appl. No. 10/612,649  
Amdt. dated Jun. 21, 2005  
Reply to Office action of Mar. 21, 2005

7. (Currently Amended) The reflective-transmissive type liquid crystal display device as claimed in claim 5, wherein the boundary between the first and second regions, and the first region each ~~include a~~ have an L-shaped configuration.

8. (Withdrawn) The reflective-transmissive type liquid crystal display device as claimed in claim 1, wherein the second region partially exposes one edge of the transparent electrode.

9. (Withdrawn) The reflective-transmissive type liquid crystal display device as claimed in claim 8, wherein the reflective electrode includes a sidewall making contact with the boundary of the first and second regions, and the sidewall is inclined to prevent the impurity from being stacked at the boundary.

10. (Withdrawn) The reflective-transmissive type liquid crystal display device as claimed in claim 8, wherein the boundary between the first and second regions, and the first region each include a U-shaped configuration.

11. (Withdrawn) The reflective-transmissive type liquid crystal display device as claimed in claim 1, wherein the second region is formed on an inside of the first region, and wherein the reflective electrode includes a sidewall adjacent to the boundary of the first and second regions, the sidewall being inclined to prevent the impurity from being stacked at the boundary.

12. (Withdrawn) The reflective-transmissive type liquid crystal display device as claimed in claim 11, wherein the transparent electrode includes a plurality of the second regions, and wherein the second regions include a circular shape or a rectangular shape.

Appl. No. 10/612,649  
Amtd. dated Jun. 21, 2005  
Reply to Office action of Mar. 21, 2005

13. (Withdrawn) The reflective-transmissive type liquid crystal display device as claimed in claim 11, wherein the color filter comprises a first tone at the first region corresponding to the reflective electrode and a second tone at the second region of the transparent electrode being exposed without being covered by the reflective electrode, which is different from the first tone.

14. (Currently Amended) A method for fabricating a reflective-transmissive type liquid crystal display device, the method comprising:

forming a thin film transistor on a first transparent substrate;

depositing an organic insulation layer on the first transparent substrate to insulate the thin film transistor, the organic insulation layer having a contact hole for exposing an output terminal of the thin film transistor;

forming a pixel electrode on the organic insulation layer, the pixel electrode having a transparent electrode connected to the output terminal of the thin film transistor through the contact hole and a reflective electrode formed on a first region of the transparent electrode, a second region of the transparent electrode being exposed without covering by the reflective electrode, edges of the second region including a boundary between the first and second regions and an opening portion where the second region does not contact the first region;

coating an orientation film on an upper surface of the pixel electrode;

rubbing the orientation film in a first direction toward the opening portion to form an orientation groove on the orientation film, ~~the orientation groove~~ rubbing the orientation film in the first direction preventing impurity from being stacked at ~~a~~ the ~~boundary between the first and~~ boundary between the first and second regions of the transparent electrode;

forming a color filter on a second transparent substrate in opposition to the pixel electrode;

Appl. No. 10/612,649  
Amdt. dated Jun. 21, 2005  
Reply to Office action of Mar. 21, 2005

forming a common electrode on an upper surface of the color filter, the common electrode facing the pixel electrode; and

interposing a liquid crystal between the common electrode and the pixel electrode on which the orientation film and the orientation groove are formed.

15. (Original) The method as claimed in claim 14, wherein forming a pixel electrode comprises:

forming the transparent electrode on the first transparent substrate on which the thin film transistor and the organic insulation layer are formed;

forming a metal thin film on an upper surface of the transparent electrode; and

patterning the metal thin film such that the reflective electrode is formed on the first area of the transparent electrode and the boundary between the first and second regions has a linear shape in a layout of the pixel electrode.

16. (Original) The method as claimed in claim 15, wherein patterning the metal thin film includes forming a sidewall of the reflective electrode at the first region adjacent to the boundary, the sidewall slanting to prevent the impurity from being stacked at the sidewall of the reflective electrode.

17. (Original) The method as claimed in claim 14, wherein forming a pixel electrode comprises:

forming the transparent electrode on the first transparent substrate on which the thin film transistor and the organic insulation layer are formed;

forming a metal thin film on an upper surface of the transparent electrode; and

patterning the metal thin film such that the reflective electrode is formed on the first

Appl. No. 10/612,649  
Amdt. dated Jun. 21, 2005  
Reply to Office action of Mar. 21, 2005

region of the transparent electrode and the second region exposes two edges of the transparent electrode, the two edges being connected to each other.

18. (Original) The method as claimed in claim 17, wherein patterning the metal thin film includes forming a sidewall of the reflective electrode at the first region adjacent to the boundary, the sidewall slanting so as to prevent the impurity from being stacked at the sidewall of the reflective electrode.

19. (Withdrawn) The method as claimed in claim 14, wherein forming a pixel electrode comprises:

forming the transparent electrode on the first transparent substrate on which the thin film transistor and the organic insulation layer are formed;

forming a metal thin film on an upper surface of the transparent electrode; and

patterning the metal thin film such that the reflective electrode is formed on the first region of the transparent electrode and the second region exposes one edge of the transparent electrode.

20. (Withdrawn) The method as claimed in claim 19, wherein patterning the metal thin film includes forming a sidewall of the reflective electrode at the first region adjacent to the boundary, the sidewall slanting so as to prevent the impurity from being stacked at the sidewall of the reflective electrode.

21. (Withdrawn) The method as claimed in claim 14, wherein forming a pixel electrode comprises:

forming the transparent electrode on the first transparent substrate such that the second

Appl. No. 10/612,649  
Amdt. dated Jun. 21, 2005  
Reply to Office action of Mar. 21, 2005

region is formed on an inside of the first region;

forming a metal thin film on an upper surface of the transparent electrode; and  
patterning the metal thin film such that the reflective electrode is formed on the first region of the transparent electrode, and a sidewall of the reflective electrode is slantingly formed at the first region adjacent to the boundary so as to prevent the impurity from being stacked at the sidewall of the reflective electrode.

22. (Withdrawn) The method as claimed in claim 21, wherein the transparent electrode includes a plurality of the second regions.

23. (Withdrawn) The method as claimed in claim 21, wherein the second regions include a circular shape or a rectangular shape.

24. (Canceled)

**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

**BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☒ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**